IN THE CLAIMS:

1. (Previously Presented): For distilling a liquid, an evaporator-and-condenser unit comprising:

A) a heat exchanger that forms at least one condensation chamber and at least one evaporation chamber and includes heat-transfer surfaces by which heat passes from the at least one condensation chamber to the at least one evaporation chamber;

B) a varying-rate evaporation-chamber irrigation system whose rate of irrigation of each said evaporation chamber has a respective average irrigation rate and so varies as repeatedly to reach a respective peak irrigation rate that is at least twice the average irrigation rate thereof; and

C) a vapor guide defining a vapor path along which it directs to the at least one condensation chamber vapor thereby produced in the at least one evaporation chamber.

2. (Previously Presented): An evaporator-and-condenser unit as defined in claim 1 wherein each said at least one evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

3. (Original): An evaporator-and-condenser unit as defined in claim 1 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

4. (Previously Presented): An evaporator-and-condenser unit as defined in claim 3 wherein each said at least one evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

5. (Previously Presented): An evaporator-and-condenser unit as defined in claim 39 wherein the irrigation system includes:

A) a main sprayer system that irrigates each said evaporation chamber for at least the majority of the time; and

B) an auxiliary sprayer system that irrigates each said at least one evaporation chamber for only a minority of the time, the rate at which each said evaporation chamber is irrigated while the auxiliary sprayer system is irrigating it being at least twice the average irrigation rate thereof.

6. (Canceled)

7. (Currently Amended): An evaporator-and-condenser unit as defined in claim ~~6~~ 47 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

8. (Original): An evaporator-and-condenser unit as defined in claim 5 wherein the auxiliary sprayer system includes a plurality of auxiliary-system nozzles from which the auxiliary sprayer system produces an auxiliary-system spray by which the auxiliary sprayer system irrigates the at least one evaporation chamber.

9. (Original): An evaporator-and-condenser unit as defined in claim 5 wherein the main sprayer system includes a plurality of main-system nozzles from which the main sprayer system produces a main-system spray by which the main sprayer system irrigates the at least one evaporation chamber.

10. (Original): An evaporator-and-condenser unit as defined in claim 5 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

11. (Currently Amended): An evaporator-and-condenser unit as defined in claim 1 48 wherein the heat exchanger is a rotary heat exchanger in which the heat-transfer surfaces are mounted for rotation about a central cavity from which the irrigation system irrigates the at least one evaporation chamber.

12. (Original): An evaporator-and-condenser unit as defined in claim 11 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

13. (Canceled)

14. (Currently Amended): An evaporator-and-condenser unit as defined in claim ~~13~~ 48 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

15. (Currently Amended): An evaporator-and-condenser unit as defined in claim ~~13~~ 48 wherein:

A) the evaporator-and-condenser unit includes a plurality of said evaporation chambers;

B) the auxiliary sprayer system includes at least one auxiliary-system nozzle, associated with at least some of said evaporation chambers, from which the auxiliary sprayer system produces an auxiliary-system spray; and

C) for each of the evaporation chambers with which the auxiliary-system nozzle is associated, the auxiliary-system nozzle executes reciprocation between positions in which the auxiliary-system spray irrigates that evaporation chamber and positions in which the auxiliary-system spray does not irrigate that evaporation chamber.

16. (Previously Presented): An evaporator-and-condenser unit as defined in claim 15 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the evaporation chambers.

17. (Previously Presented): An evaporator-and-condenser unit as defined in claim 1 wherein:

A) the peak irrigation rate for each said at least one evaporation chamber exceeds the steady-state rate required to keep the heat-transfer surfaces thereof wetted; and

B) the average irrigation rate for each said at least one evaporation chamber is no more than half the steady-state rate required to keep the heat-transfer surfaces of that evaporation chamber wetted.

18. (Previously Presented): An evaporator-and-condenser unit as defined in claim 17 wherein each said at least one evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

19. (Original): compressor An evaporator-and-condenser unit as defined in claim 17 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

20. (Previously Presented): An evaporator-and-condenser unit as defined in claim 43 wherein the irrigation system includes:

A) a main sprayer system that irrigates each said evaporation chamber for at least the majority of the time; and

B) an auxiliary sprayer system that irrigates each said at least one evaporation chamber for only a minority of the time, the rate at which each said evaporation chamber is irrigated while the auxiliary sprayer system is irrigating it being at least twice the average irrigation rate thereof.

21. (Canceled)

22. (Canceled)

23. (Currently Amended): An evaporator-and-condenser unit as defined in claim ~~22~~ 51 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

24. (Previously Presented): An evaporator-and-condenser unit as defined in claim 17 wherein the heat exchanger is a rotary heat exchanger in which the heat-transfer surfaces are mounted for rotation about a central cavity from which the irrigation system irrigates the at least one evaporation chamber.

25. (Original): An evaporator-and-condenser unit as defined in claim 24 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

26. (Previously Presented): An evaporator-and-condenser unit as defined in claim 45 wherein the irrigation system includes:

A) a main sprayer system that irrigates each said evaporation chamber for at least the majority of the time; and

B) an auxiliary sprayer system that irrigates each said at least one evaporation chamber for only a minority of the time, the rate at which each said evaporation chamber is irrigated while the auxiliary sprayer system is irrigating it being at least twice the average irrigation rate thereof.

27. (Original): An evaporator-and-condenser unit as defined in claim 26 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

28. (Previously Presented): An evaporator-and-condenser unit as defined in claim 26 wherein:

A) the evaporator-and-condenser unit includes a plurality of said evaporation chambers;

B) the auxiliary sprayer system includes at least one auxiliary-system nozzle, associated with at least some of said evaporation chambers, from which the auxiliary sprayer system produces an auxiliary-system spray; and

C) for each of the evaporation chambers with which the auxiliary-system nozzle is associated, the auxiliary-system nozzle executes reciprocation between positions in which the auxiliary-system spray irrigates that evaporation chamber and positions in which the auxiliary-system spray does not irrigate that evaporation chamber.

29. (Original): An evaporator-and-condenser unit as defined in claim 28 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

30. (Withdrawn): For generating vapor from a liquid, a method comprising:

A) providing a heat exchanger that includes heat-transfer surfaces, forming at least one condensation chamber and at least one evaporation chamber, by which heat passes from the condensation chamber to the heat exchanger;

B) irrigating each said evaporation chamber at a respective irrigation rate that has a respective average irrigation rate and so varies as repeatedly to reach a respective peak irrigation rate that is at least twice the respective average irrigation rate; and

C) directing into the at least one condensation chamber vapor thereby produced in the at least one evaporation chamber.

31. (Withdrawn): A method as defined in claim 30 wherein each evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

32. (Withdrawn): A method as defined in claim 30 wherein the method further includes so compressing vapor in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

33. (Withdrawn): A method as defined in claim 32 wherein each evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

34. (Withdrawn): A method as defined in claim 30 wherein:

A) the peak irrigation rate for each evaporation chamber exceeds the steady-state rate required to keep the heat-transfer surfaces thereof wetted; and

B) the average irrigation rate for each evaporation chamber is no more than half the steady-state rate required to keep the heat-transfer surfaces of that evaporation chamber wetted.

35. (Withdrawn): A method as defined in claim 34 wherein each evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

36. (Withdrawn): A method as defined in claim 34 wherein the method further includes so compressing vapor in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

37. (Withdrawn): A method as defined in claim 36 wherein each evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

38. (Previously presented): For distilling a liquid, an evaporator-and-condenser unit comprising:

A) a heat exchanger that forms at least one condensation chamber and at least one evaporation chamber and includes heat-transfer surfaces by which heat passes from the at least one condensation chamber to the at least one evaporation chamber;

B) means for irrigating each said evaporation chamber at an irrigation rate that has a respective average irrigation rate and so varies as repeatedly to reach a respective peak irrigation rate that is at least twice the average irrigation rate thereof; and

C) a vapor guide defining a vapor path along which it directs to the at least one condensation chamber vapor thereby produced in the at least one evaporation chamber.

39. (Previously presented): An evaporator-and-condenser unit as defined in claim 1 wherein:

A) the evaporation-and-condenser unit includes a plurality of the evaporation chambers; and

B) the times at which the rates of irrigation of some of the evaporation chambers reach their respective peak irrigation rates are different from those at which others of the evaporation chambers do.

40. (Previously Presented): A method as defined in claim 39 wherein each evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

41. (Previously Presented): An evaporator-and-condenser unit as defined in claim 11 wherein:

A) the evaporation-and-condenser unit includes a plurality of the evaporation chambers; and

B) the times at which the rates of irrigation of some of the evaporation chambers reach their respective peak irrigation rates are different from those at which others of the evaporation chambers do.

42. (Previously Presented): A method as defined in claim 41 wherein each evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

43. (Previously Presented): An evaporator-and-condenser unit as defined in claim 17 wherein:

A) the evaporation-and-condenser unit includes a plurality of the evaporation chambers; and

B) the times at which the rates of irrigation of some of the evaporation chambers reach their respective peak irrigation rates are different from those at which others of the evaporation chambers do.

44. (Previously Presented): A method as defined in claim 43 wherein each evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

45. (Previously Presented): An evaporator-and-condenser unit as defined in claim 24 wherein:

A) the evaporation-and-condenser unit includes a plurality of the evaporation chambers; and

B) the times at which the rates of irrigation of some of the evaporation chambers reach their respective peak irrigation rates are different from those at which others of the evaporation chambers do.

46. (Previously Presented): A method as defined in claim 45 wherein each evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

47. (New) For distilling a liquid, an evaporator-and-condenser unit comprising:

A) a heat exchanger that forms at least one condensation chamber and a plurality of evaporation chambers and includes heat-transfer surfaces by which heat passes from the at least one condensation chamber to the evaporation chambers;

B) a varying-rate evaporation-chamber irrigation system whose rate of irrigation of each said evaporation chamber has a respective average irrigation rate and so varies as repeatedly to reach a respective peak irrigation rate that is at least twice the average irrigation rate thereof, the times at which at least one of the evaporation chambers reaches its peak irrigation rate differing from the times at which at least one other of the evaporation chambers does, the irrigation system including:

i) a main sprayer system, which irrigates each said evaporation chamber for at least the majority of the time; and

ii) an auxiliary sprayer system, which irrigates each said at least one evaporation chamber for only a minority of the time and includes at least one auxiliary-system nozzle, associated with at least some of said evaporation chambers for each of which that auxiliary-system nozzle executes reciprocation between positions in which the auxiliary-system spray irrigates that evaporation chamber and positions in which the auxiliary-system spray does not irrigate that evaporation chamber, the rate at which each said evaporation chamber is irrigated while the auxiliary sprayer system is irrigating it being at least twice the average irrigation rate thereof; and

C) a vapor guide defining a vapor path along which it directs to the at least one condensation chamber vapor thereby produced in the at least one evaporation chamber.

48. (New) For distilling a liquid, an evaporator-and-condenser unit comprising:

A) a heat exchanger that forms at least one condensation chamber and a plurality of evaporation chambers and includes heat-transfer surfaces by which heat passes from the at least one condensation chamber to the plurality of evaporation chambers;

B) a varying-rate evaporation-chamber irrigation system whose rate of irrigation of each said evaporation chamber has a respective average irrigation rate and so varies as repeatedly to reach a respective peak irrigation rate that is at least twice the average irrigation rate thereof, the times at which at least one of the evaporation chambers reaches its peak irrigation rate differing from the times at which at least one other of the evaporation chambers does, the irrigation system including:

C) a main sprayer system that irrigates each said evaporation chamber for at least

i) the majority of the time; and

ii) an auxiliary sprayer system that irrigates each said at least one evaporation chamber for only a minority of the time, the rate at which each said evaporation chamber is irrigated while the auxiliary sprayer system is irrigating it being at least twice the average irrigation rate thereof; and

D) a vapor guide defining a vapor path along which it directs to the at least one condensation chamber vapor thereby produced in the at least one evaporation chamber.

49. (New) An evaporator-and-condenser unit as defined in claim 49 wherein the heat exchanger is a rotary heat exchanger in which the heat-transfer surfaces are mounted for rotation about a central cavity from which the irrigation system irrigates the evaporation chambers.

50. (New) For distilling a liquid, an evaporator-and-condenser unit comprising:

A) a heat exchanger that forms at least one condensation chamber and a plurality of evaporation chambers and includes heat-transfer surfaces by which heat passes from the at least one condensation chamber to the evaporation chambers;

B) a varying-rate evaporation-chamber irrigation system whose rate of irrigation of each said evaporation chamber has a respective average irrigation rate and so varies as repeatedly to reach a respective peak irrigation rate that is at least twice the average irrigation rate thereof, the times at which at least one of the evaporation chambers reaches its peak irrigation rate differing from the times at which at least one other of the evaporation chambers does, the evaporation chambers' peak irrigation rates exceeding the steady-state rate required to keep the heat-transfer surfaces thereof wetted, but the evaporation chambers'

average irrigation rates being no more than half that steady-state rate, the irrigation system including:

i) a main sprayer system, which irrigates each said evaporation chamber for at least the majority of the time; and

ii) an auxiliary sprayer system, which irrigates each said at least one evaporation chamber for only a minority of the time, the rate at which each said evaporation chamber is irrigated while the auxiliary sprayer system is irrigating it being at least twice the average irrigation rate thereof;

C) a vapor guide defining a vapor path along which it directs to the at least one condensation chamber vapor thereby produced in the at least one evaporation chamber; and

D) a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the at least one evaporation chamber.

51. (New) For distilling a liquid, an evaporator-and-condenser unit comprising:

A) a heat exchanger that forms at least one condensation chamber and a plurality of evaporation chambers and includes heat-transfer surfaces by which heat passes from the at least one condensation chamber to the evaporation chambers;

B) a varying-rate evaporation-chamber irrigation system whose rate of irrigation of each said evaporation chamber has a respective average irrigation rate and so varies as repeatedly to reach a respective peak irrigation rate that is at least twice the average irrigation rate thereof, the times at which at least one of the evaporation chambers reaches its peak irrigation rate differing from the times at which at least one other of the evaporation chambers does, the evaporation chambers' peak irrigation rates exceeding the steady-state rate required to keep the heat-transfer surfaces thereof wetted, but the evaporation chambers'

average irrigation rates being no more than half that steady-state rate, the irrigation system including:

i) a main sprayer system, which irrigates each said evaporation chamber for at least the majority of the time; and

ii) an auxiliary sprayer system, which irrigates each evaporation chamber for only a minority of the time and includes at least one auxiliary-system nozzle, associated with at least some of said evaporation chambers for each of which that auxiliary-system nozzle executes reciprocation between positions in which the auxiliary-system spray irrigates that evaporation chamber and positions in which the auxiliary-system spray does not irrigate that evaporation chamber, the rate at which each said evaporation chamber is irrigated while the auxiliary sprayer system is irrigating it being at least twice the average irrigation rate thereof; and

C) a vapor guide defining a vapor path along which it directs to the at least one condensation chamber vapor thereby produced in the at least one evaporation chamber.